

# PDK Noise/Operations 101

## DeKalb-Peachtree Airport

Mario Evans  
Airport Director

Nate Schattner  
Noise and Environmental Analyst





# Brief History

✈️ Camp Gordon (1917-1921)

✈️ WWI

✈️ Naval Air Station Atlanta (1942-1959)

✈️ WWII

✈️ DeKalb-Peachtree Airport (1959-Present)

✈️ Public-Use



# PDK Background



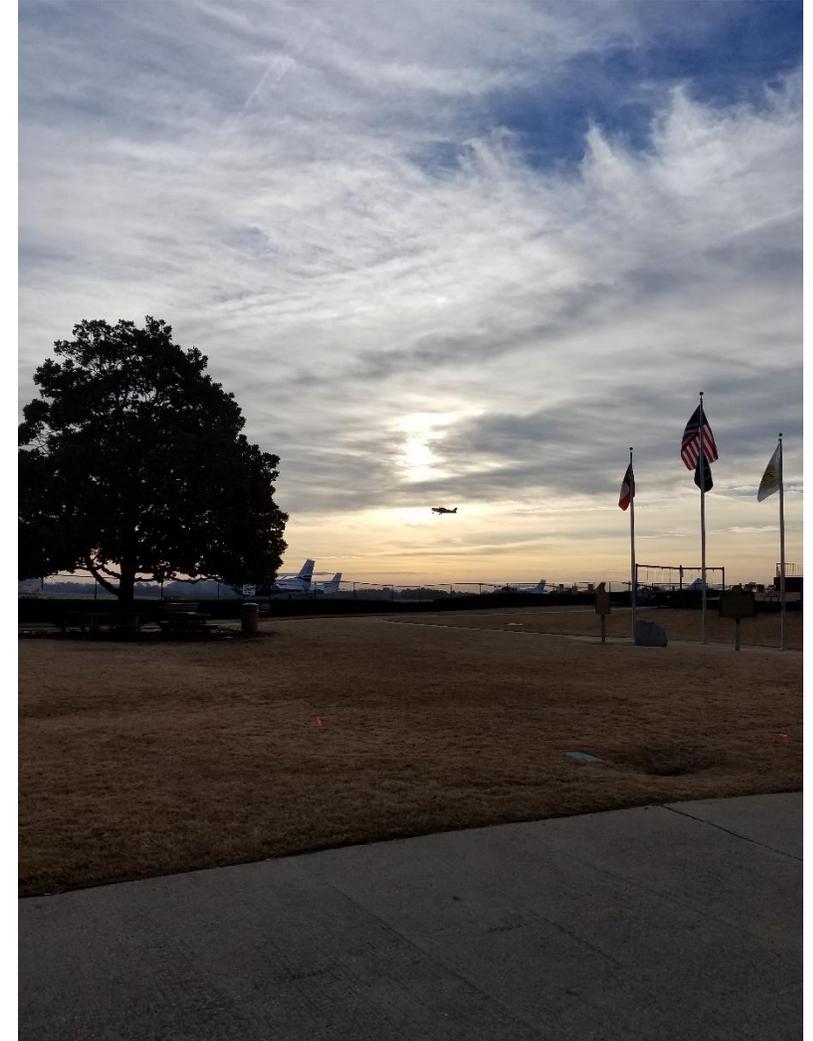
✈️ 2<sup>nd</sup> busiest airport in the state of GA

✈️ “General Aviation Reliever Airport”

✈️ Only 8 miles from downtown Atlanta

✈️ Excellent access to Buckhead Financial District

✈️ Perimeter Financial Districts  
and its northern suburbs





# General Aviation

## ✈️ What is general aviation?

- ✈️ All *civil* aviation except for scheduled passenger airline service

## ✈️ Airport User Mix includes:

- ✈️ Flight Schools (10 Fixed Wing)
- ✈️ Helicopter Operators
- ✈️ Corporate/Business/Charter Operations
- ✈️ Medical Operators
- ✈️ Personal/Recreational Flyers
- ✈️ All News Helicopters



# Importance of General Aviation

## ✈️ Efficiency

- ✈️ Access multiple destinations in one day
- ✈️ No TSA, long layovers, early airport arrivals, lost baggage, etc.
- ✈️ Less congestion at large, commercial service airports

## ✈️ Time-multiplier

- ✈️ Able to work in a secure & confidential environment while in-flight

## ✈️ Access to more destinations

- ✈️ Most airports in the U.S. do NOT have commercial service

## ✈️ Cost Saving

- ✈️ Less dependency on hotels and shorter ground transportation

## ✈️ Education

## ✈️ Local Economic Impact (Jobs, Taxes, Attracting Business)





# What is an operation?

- ✈ An operation is One takeoff or landing.
- ✈ PDK has on average about 350-450 operations per day.

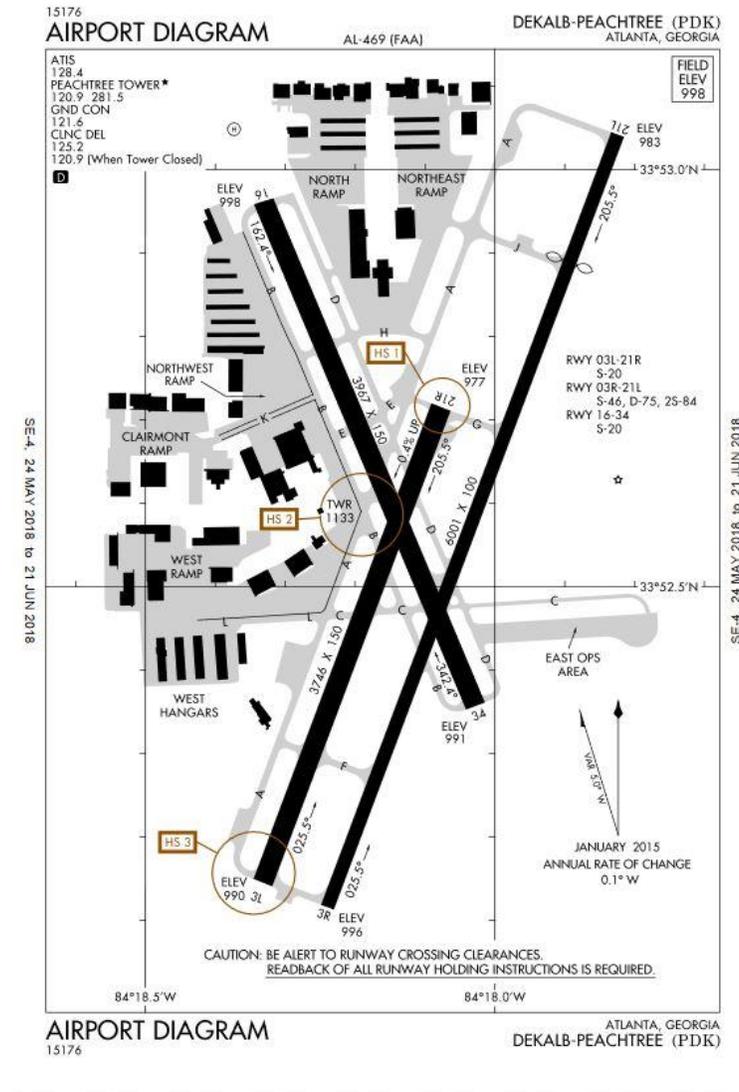
	2018	2017	2016	2008	1998
Yearly	151,132	159,066	158,441	187,006	233,233
Daily Average	414	436	433	511	639



# Airport Movement Areas



- ✈ 3 Runways
  - ✈ 2 Parallel North-South,
  - ✈ 1 Crosswind NW-SE
- ✈ Aircraft will always takeoff/land into the direction of the prevailing wind
- ✈ FAA Control Tower
  - (0630-2300L M-F; 0700-2300 Sat/Sun)
  - ✈ FAA has jurisdiction over the airspace and movement area
  - ✈ IFR – Instrument Flight Rules
  - ✈ VFR – Visual Flight Rules





# Flights and the role of the Airport

- ✈ The Airport does not approve each flight.
- ✈ The Airport does not tell aircraft how or where to fly.
- ✈ The Airport maintains the ground, not what happens in the sky.
- ✈ If a pilot decides he/she wants to hop in a plane and go, he or she can do so. Just as we can do in our cars.
- ✈ The airport is not provided with a flight plan or manifest of each flight. Flight plan information goes to the FAA.
- ✈ VFR operations do not require flight plans, but IFR operations do.



# Airspace and Airport Operations

## ✈️ PDK is in Class D Airspace

✈️ Extends up to 3500 Ft MSL (3,000 with LOA with ATL Approach)

## ✈️ [Airport Traffic Pattern](#)

## ✈️ PDK Airspace Considerations

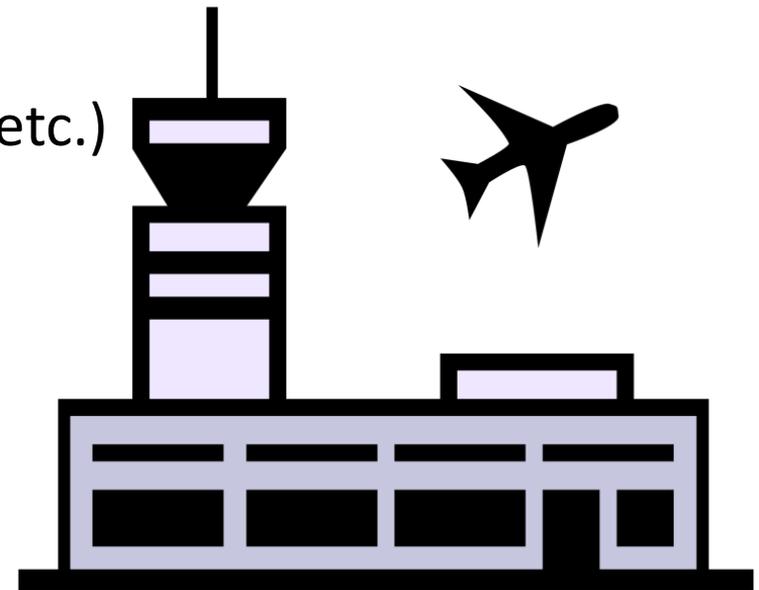
✈️ Congestion

✈️ Other Airports (ATL, Fulton, Cobb, Gwinnett, Dobbins, etc.)

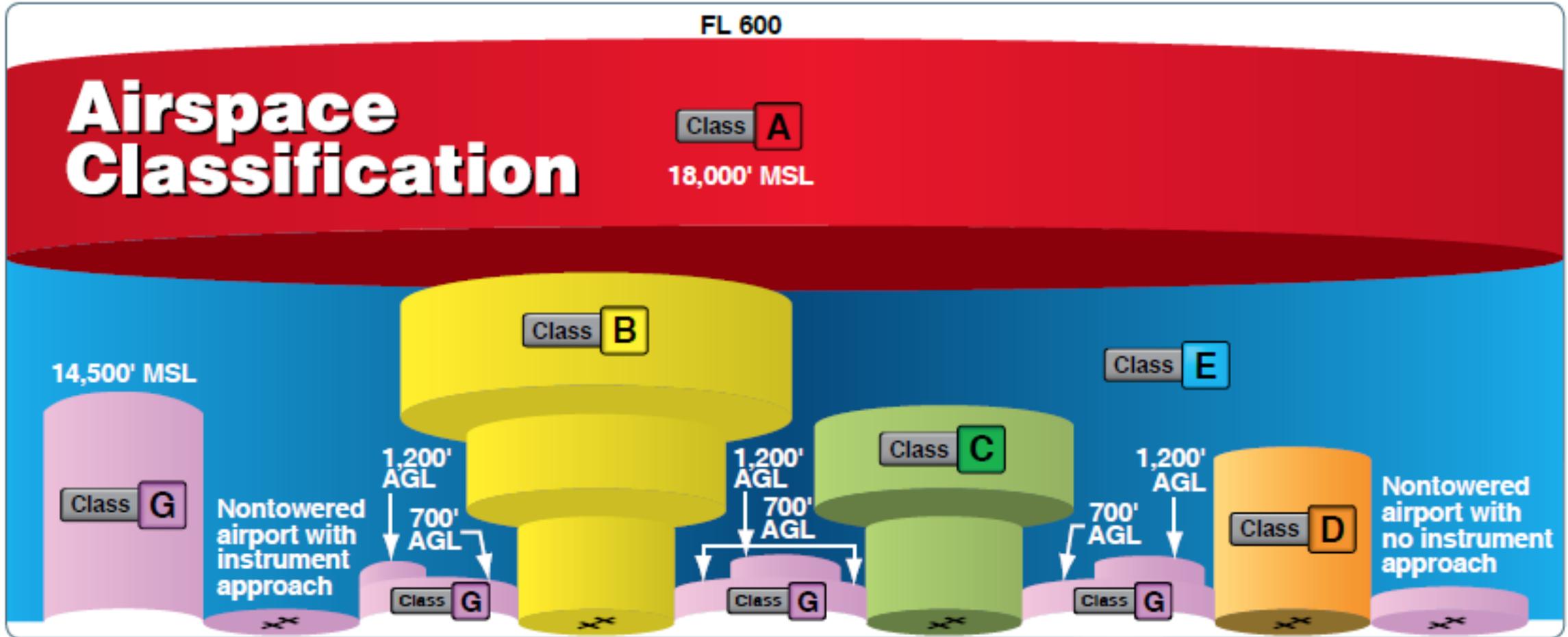
✈️ Obstructions

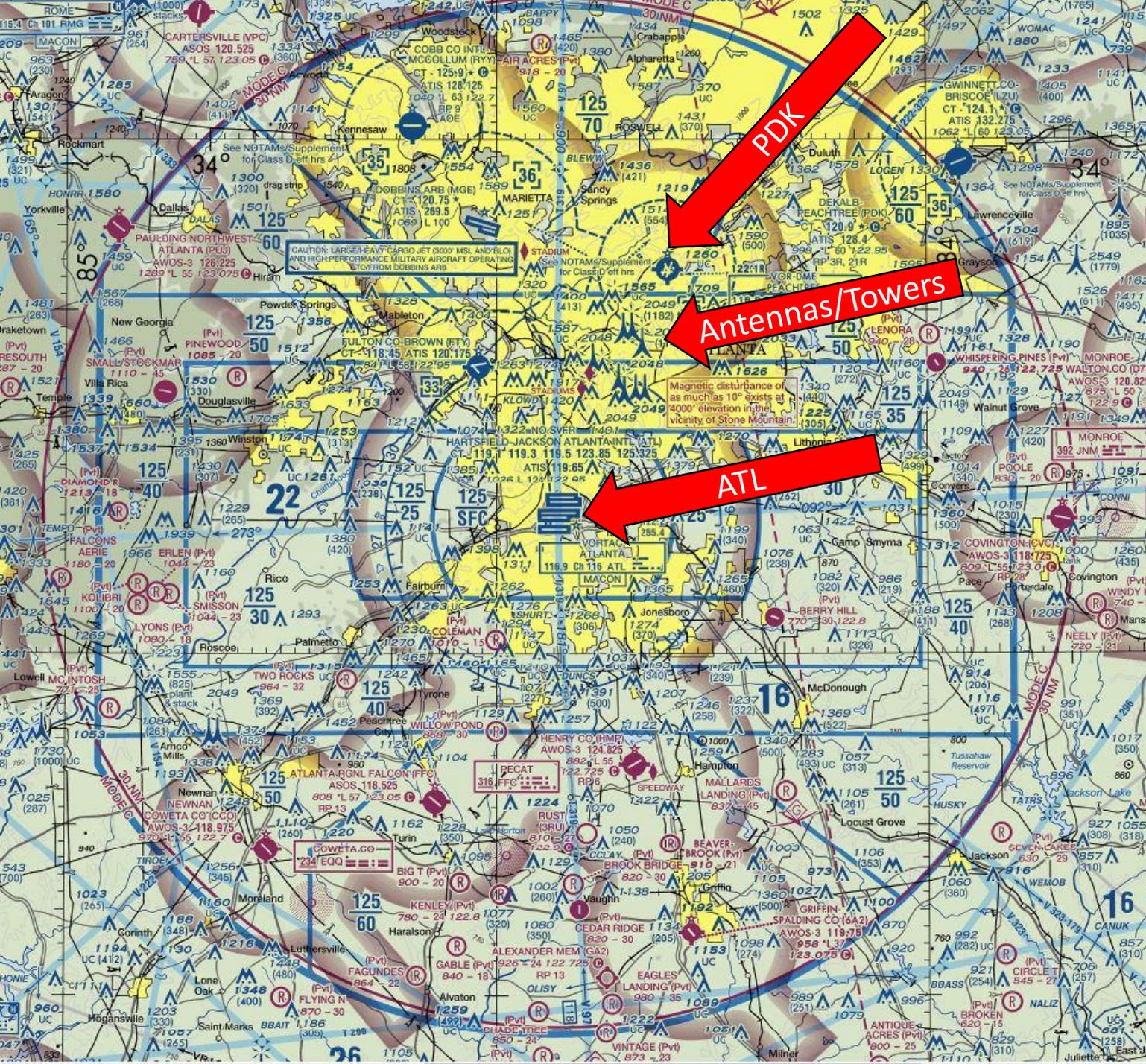
## ✈️ Approaches into PDK

✈️ [ILS](#), [GPS-Y](#), [VOR-DME](#), Visual

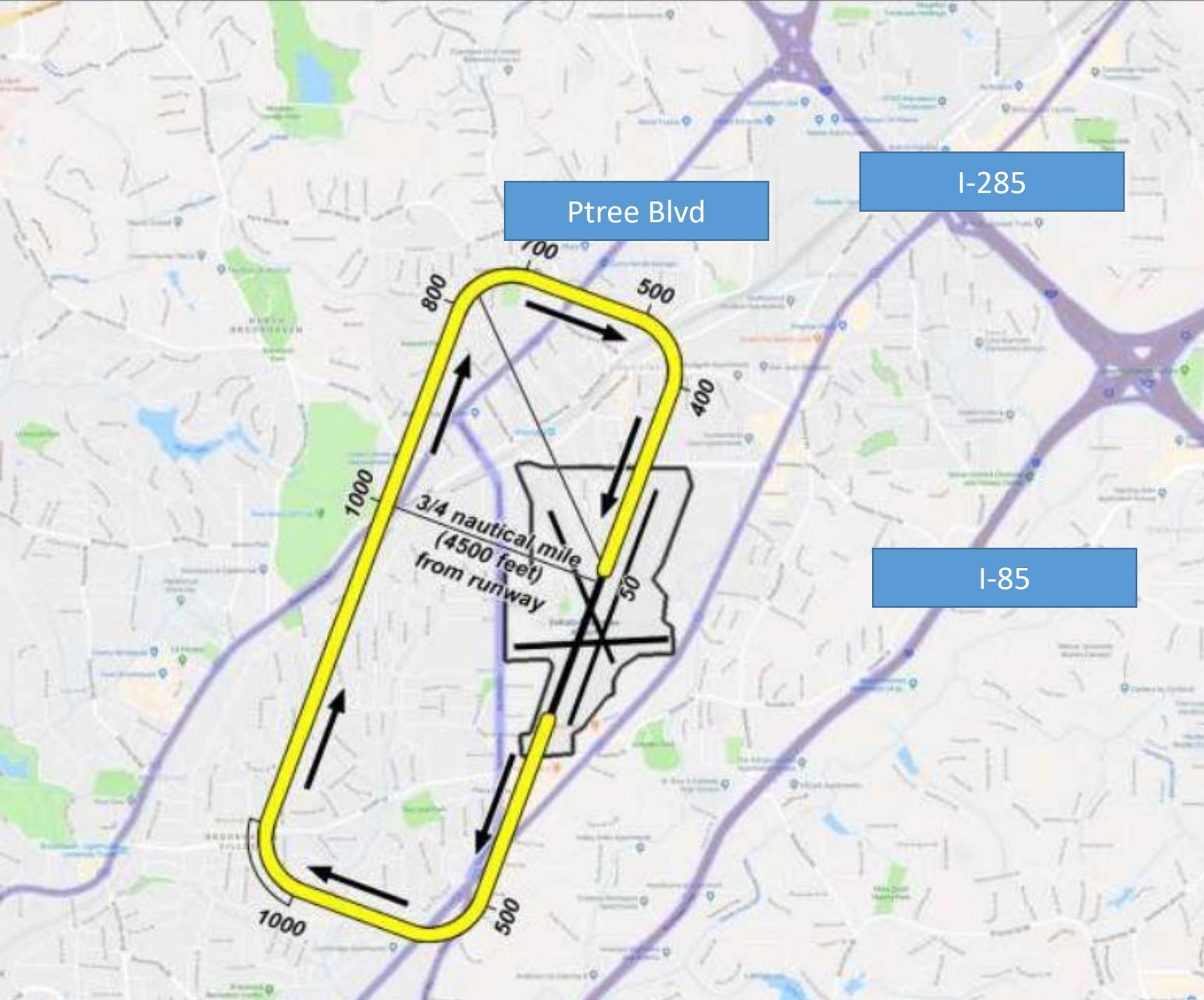


# Airspace Classification (Upside down wedding cake)





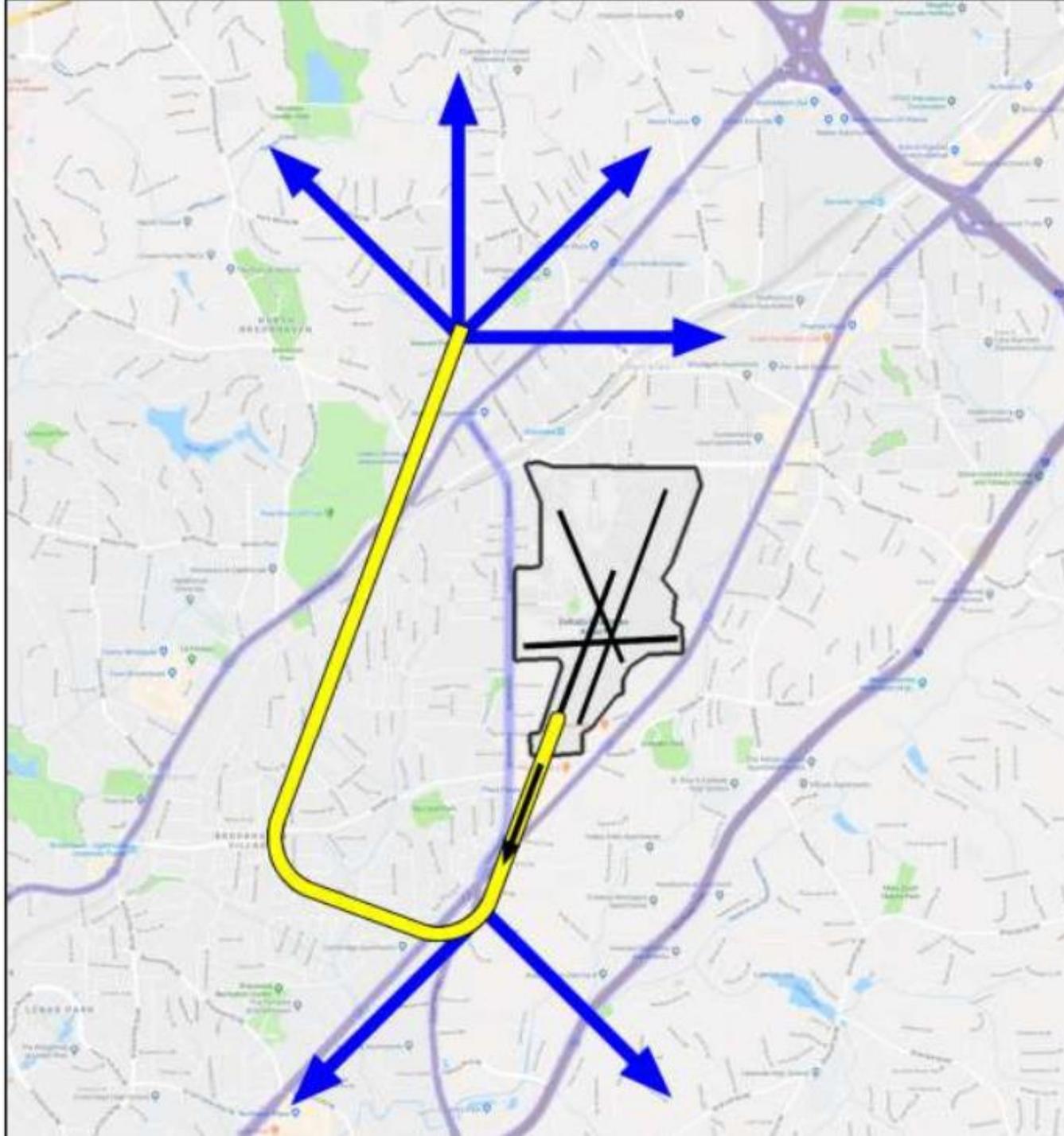
# Atlanta Air Space Sectional Chart

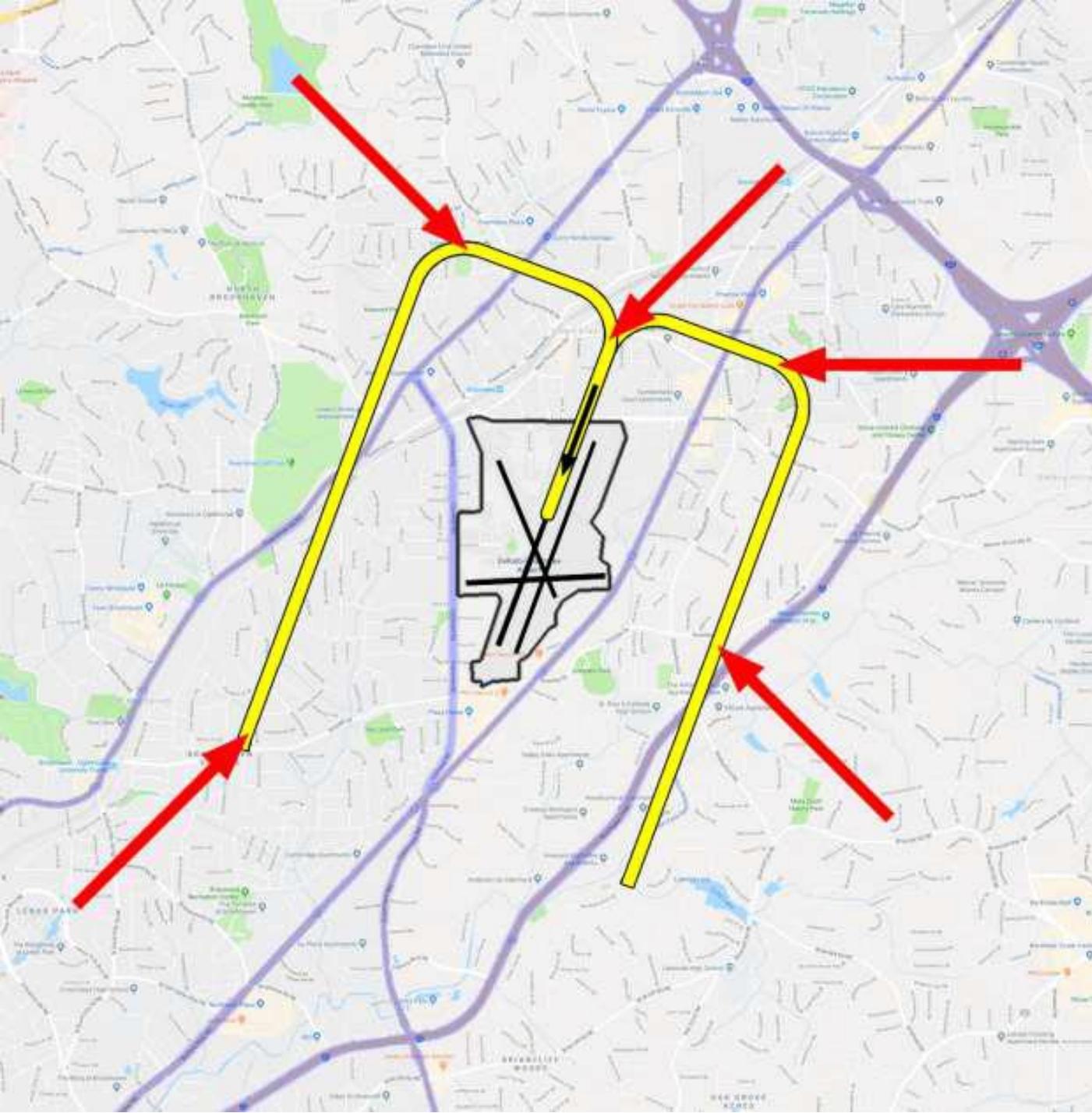


PDK West Traffic Pattern

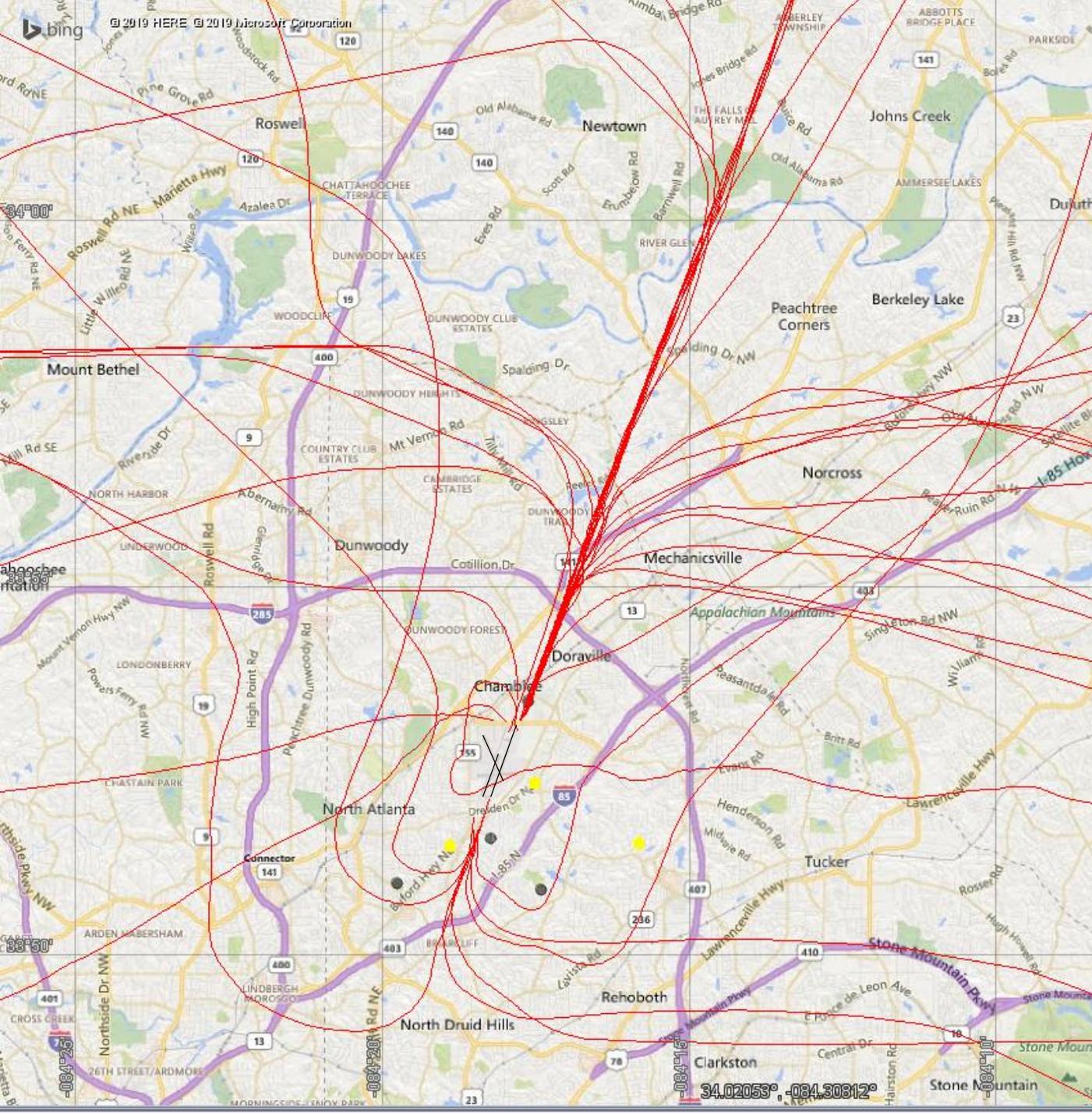


## South Flow Departures



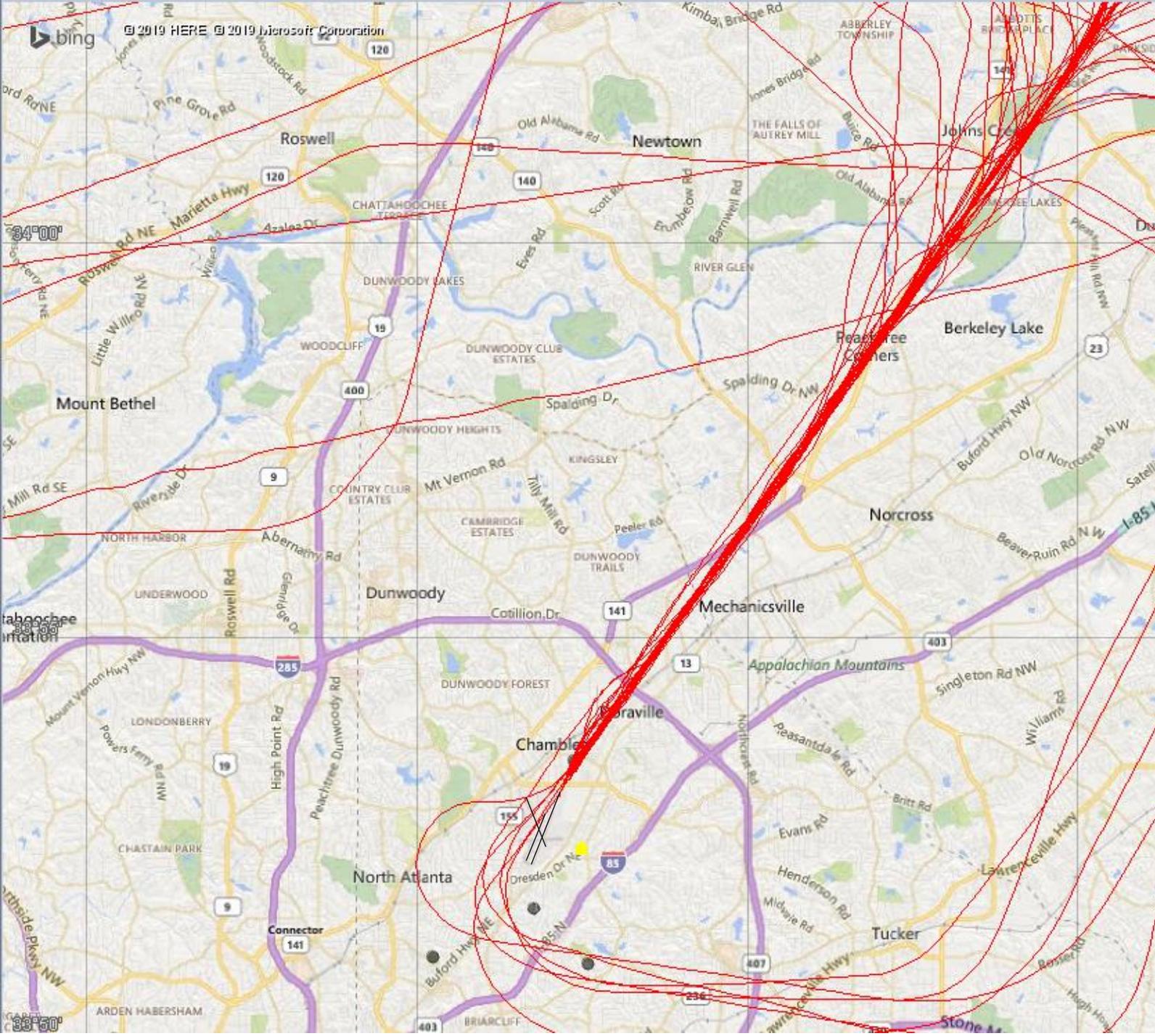


South Flow Arrivals

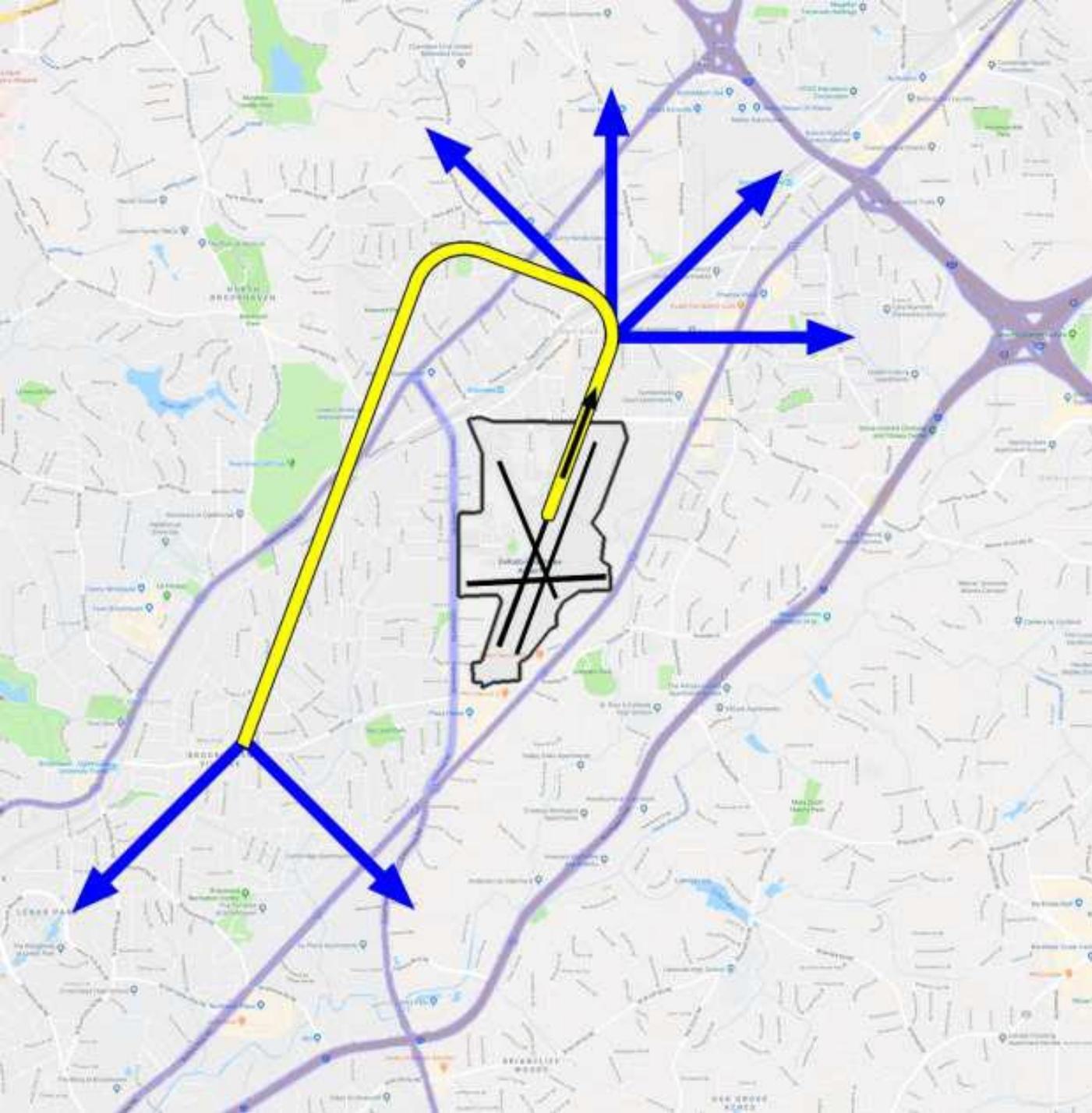


### Example: 21L ILS Approach

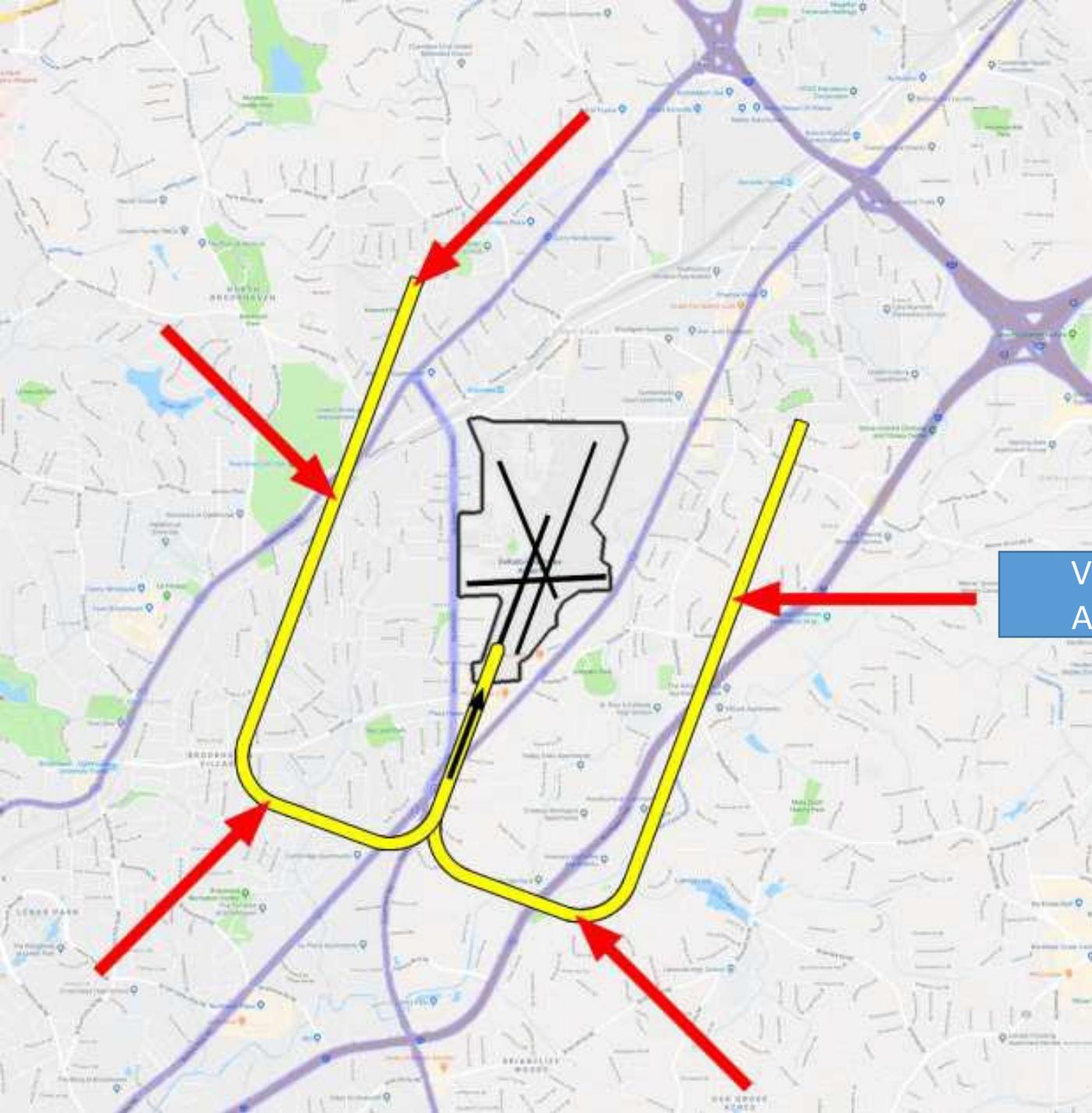
- Used on southbound arrivals
- Used during inclement weather (low cloud ceiling, low visibility, etc.)
  - unless winds are strongly from the north



Example: GPS-Y Approach  
\* 15° Offset from ILS  
\* Limitations



North Flow Departures



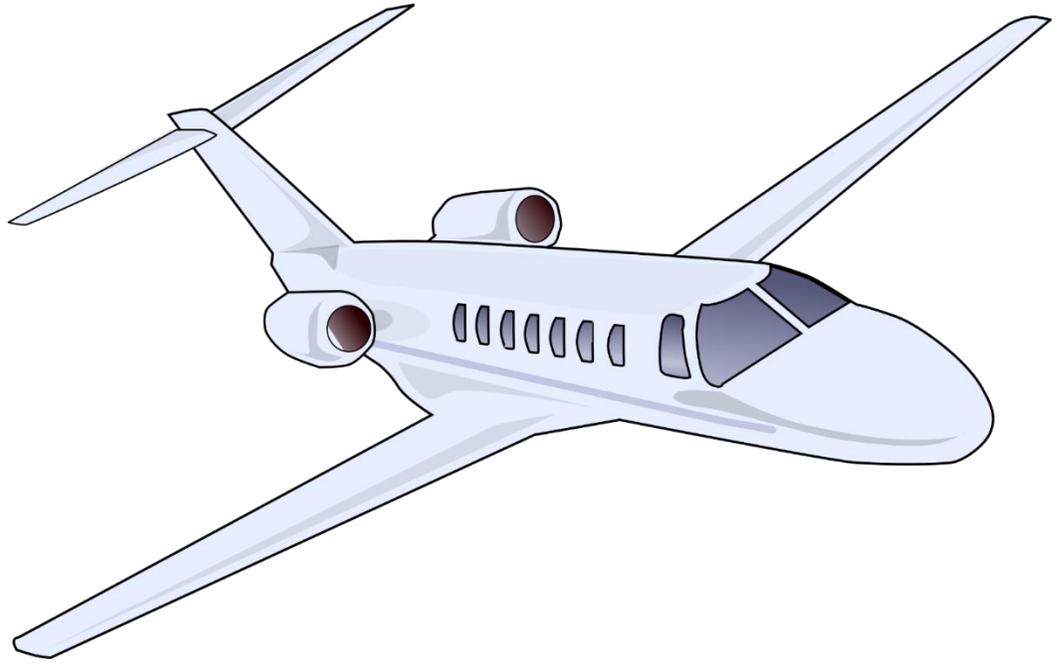
North Flow Arrivals

VOR DME Approach



# Operations Summary

✈ Any questions on operations ?





# What is Noise?

✈️ “A sound, especially one that is loud or unpleasant or that causes disturbance” (Google 2018).

✈️ Very subjective

✈️ Aircraft/Noise Disturbances can be related to:

✈️ Repetitive Noise (e.g., touch and go ops)

✈️ Loud Noise

✈️ Frequency (e.g., pitch of engine/prop)

✈️ Type (jet, prop, helicopter)

✈️ Duration (e.g., run-ups)

✈️ Time (e.g., night/voluntary curfew)





# Sound Measurements

- ✈ Different measurements exist to quantify noise (LMax, SEL, Leq, etc.)
  - ✈ SEL → Cumulative sound energy in 1 sec
  - ✈ LMax → Peak point on a bell curve of sound (think derivative)
  - ✈ Leq → Average
- ✈ The **decibel** is a ratio compared with a reference sound pressure.
  - ✈ Different weighting (A-weighting is what humans can hear)
- ✈ Sound pressure increases by powers of 10 (Logarithmic)
  - ✈  $1 \rightarrow 10 \text{ db} = \mathbf{10x}$ ;  $1 \rightarrow 20\text{db} = \mathbf{100x}$
- ✈ Perceived Loudness doubles for every increase of 10 dB
  - ✈  $60 \rightarrow 70 \text{ db} = \mathbf{2x}$ ;  $60 \rightarrow 80 \text{ db} = \mathbf{4x}$

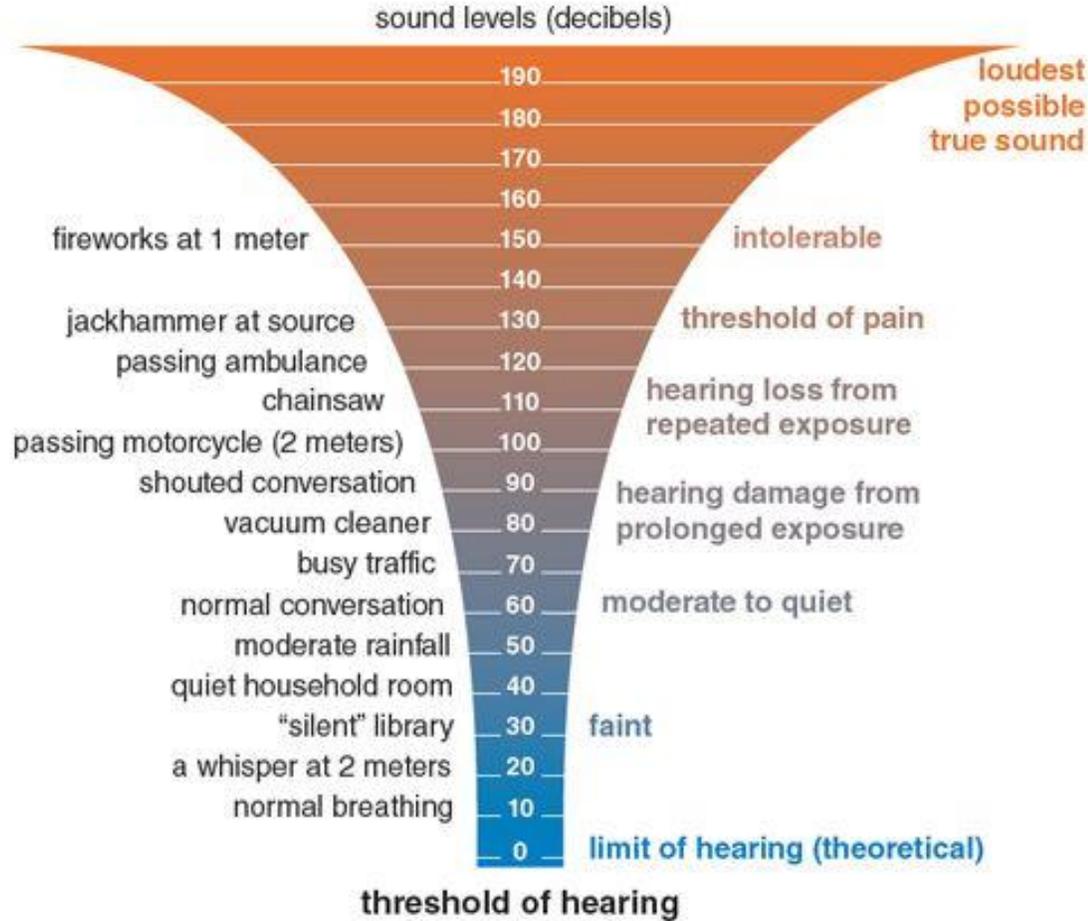


# LMax Example





# Example Decibel Chart





# Noise Legislation

## ✈ Airport Noise and Capacity Act of 1990 (ANCA)

- ✈ Limits how airports can address noise
- ✈ Airports are prohibited from adopting overly restrictive, or outright punitive, anti-noise ordinances
- ✈ Phased out Stage 2 Aircraft from continental U.S. airspace
  - Aircraft MTOW > 75,000 lbs: Dec. 31, 1999
  - Aircraft MTOW < 75,000 lbs: Dec. 31, 2015
- ✈ Grandfathered-in noise restrictions in effect before 1990



# Rules about Noise/Access Restrictions



- ✈️ Must be reasonable, non-arbitrary, and non-discriminatory
- ✈️ Must avoid creating an undue burden on interstate & foreign commerce
- ✈️ Must keep airspace safe & efficient
- ✈️ Avoid conflict with federal law
- ✈️ Must not create an undue burden on the National Aviation System





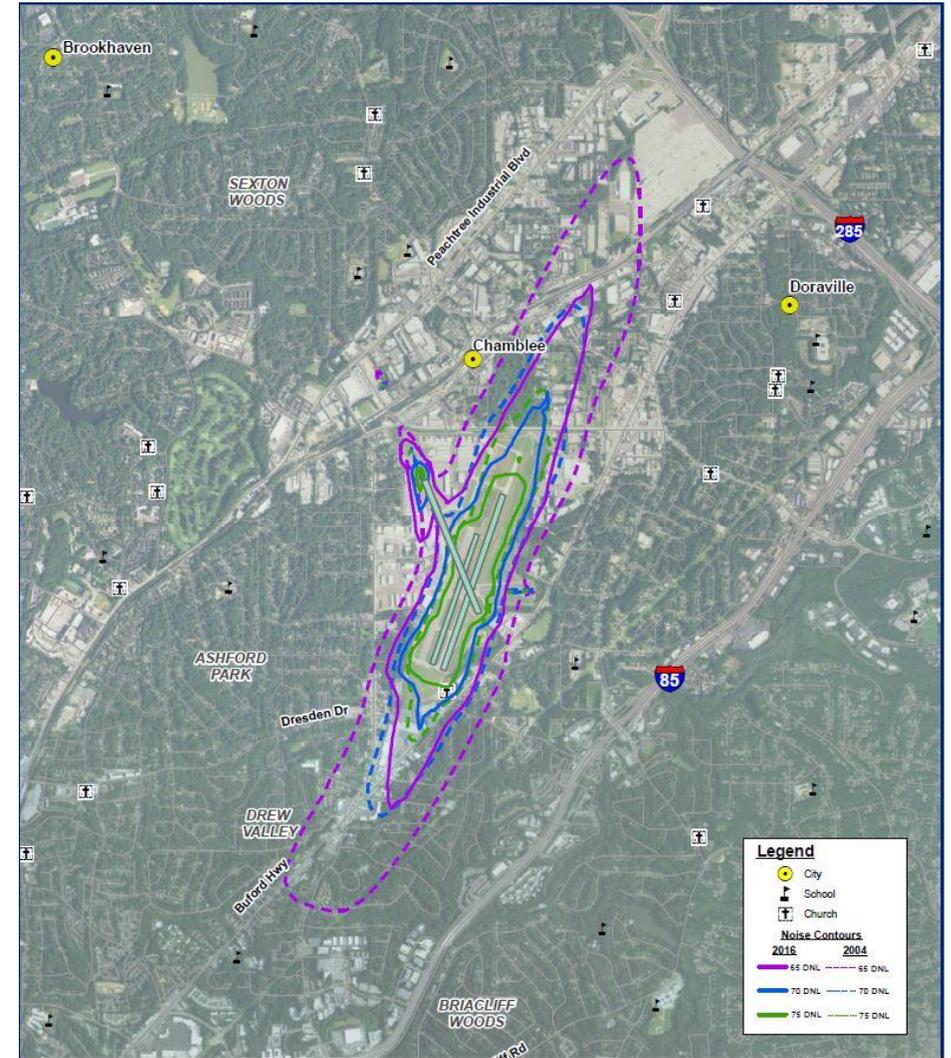
# Noise FAR Part 150

## ✈ Airport Land Use Compatibility Planning

✈ Noise Exposure Map (NEM)

✈ Noise Compatibility Program (NCP)

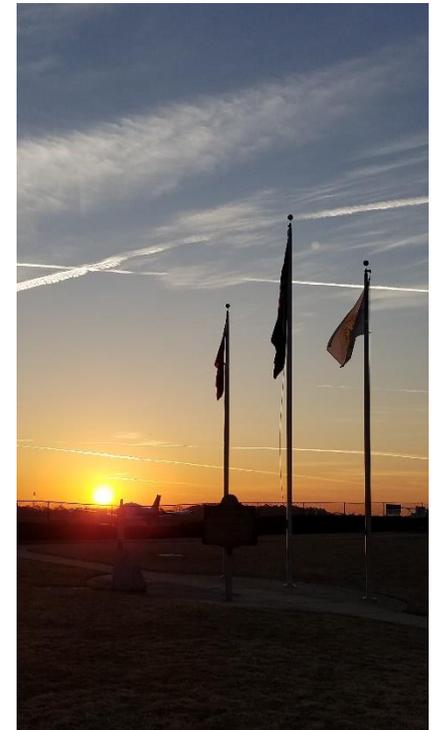
## ✈ PDK Part 150 (1991-1997)





# PDK Part 150 Recommendations

- ✈ Informal North Flow Preferential Runway Use Program
- ✈ 3 Standard Instrument Departures (SIDs)
- ✈ Designated Maintenance Run-up Areas
- ✈ Updated NOMS and Noise Monitoring Stations
- ✈ Land Acquisition and Relocation
- ✈ Voluntary Sound Attenuation (Insulation Program)
- ✈ Preventive Land Use Compatibility Measures
- ✈ Establish & Maintain Noise Information Office
  - ✈ Dissemination of info and communication with pilots



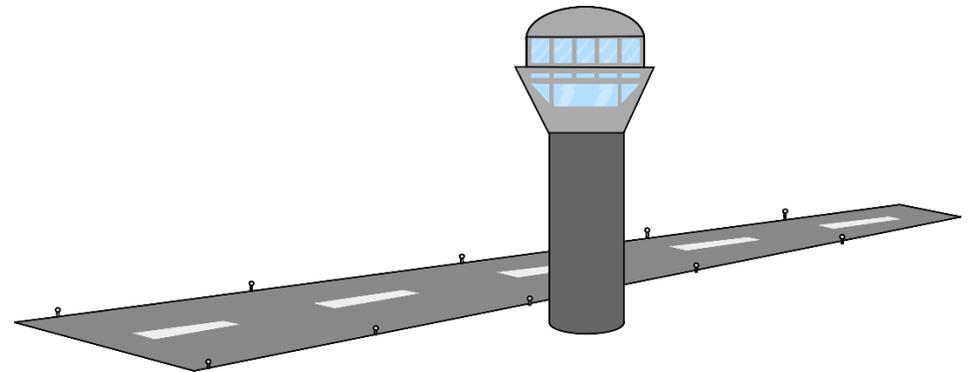
# PDK Part 150 Recommendations Departure Procedures



✈ PDK Experimented with 3 different Departure Procedures (DP) from 2002-2004 that focused on routing aircraft down Buford Hwy up to a certain altitude. These procedures were recommended in the Part 150 Update (1997).

✈ Initiative ultimately was discontinued due to:

- Significant Change in Noise Exposure (+1.5 dBA if DNL > 65 dBA)
- Diversity of Aircraft (significant performance differentials)
- Effect of winds on aircraft course



# PDK Part 150 Recommendations Soundproofing (SIP)



## ✈️ 65 DNL (Day-Night Average)

### ✈️ 24 Hour average sound level in dBA

- 10 db penalty 10pm-9am
- Yearly DNL used for Part 150

✈️ Cumulative metric – people respond more predictably to cumulative noise rather than single noise events

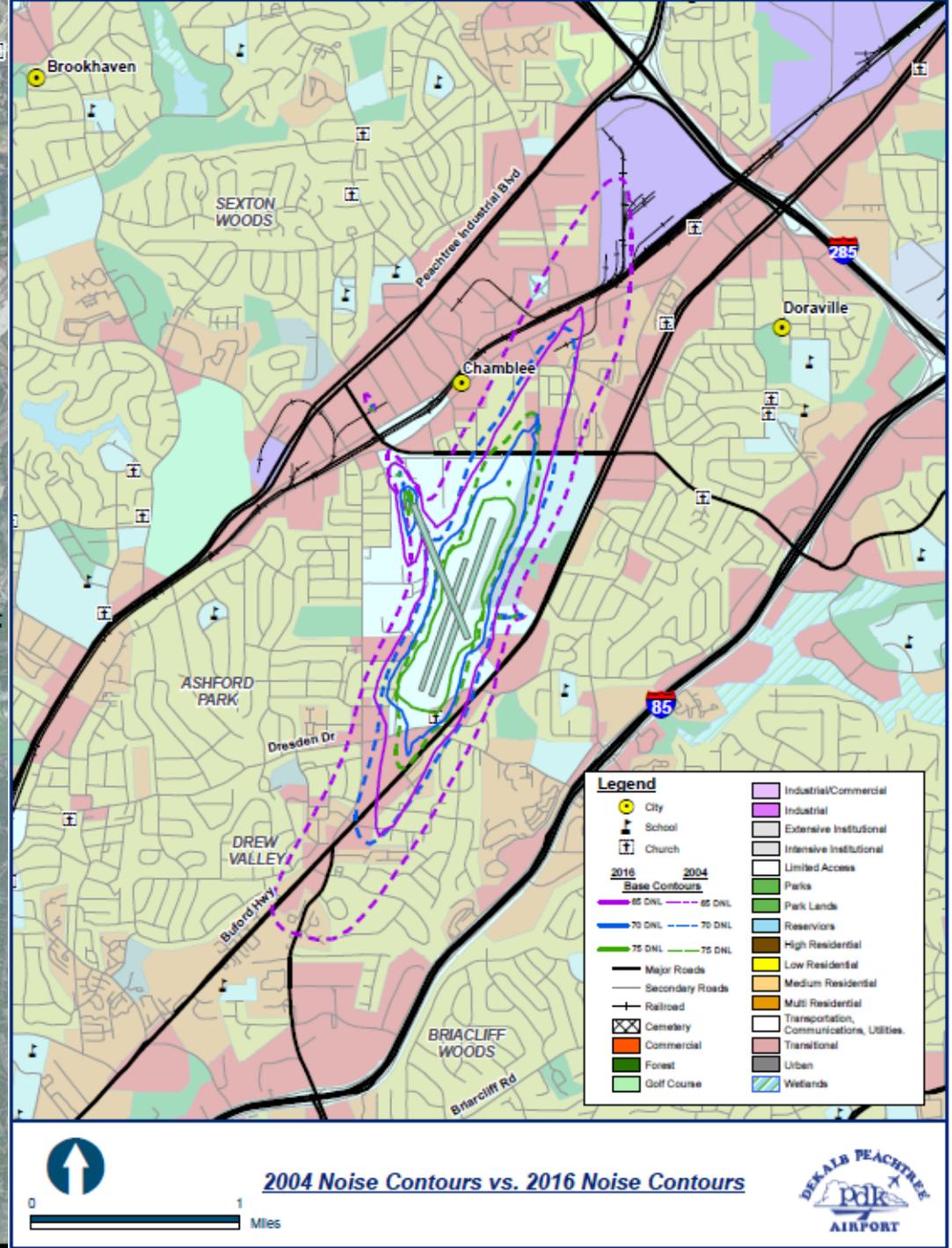
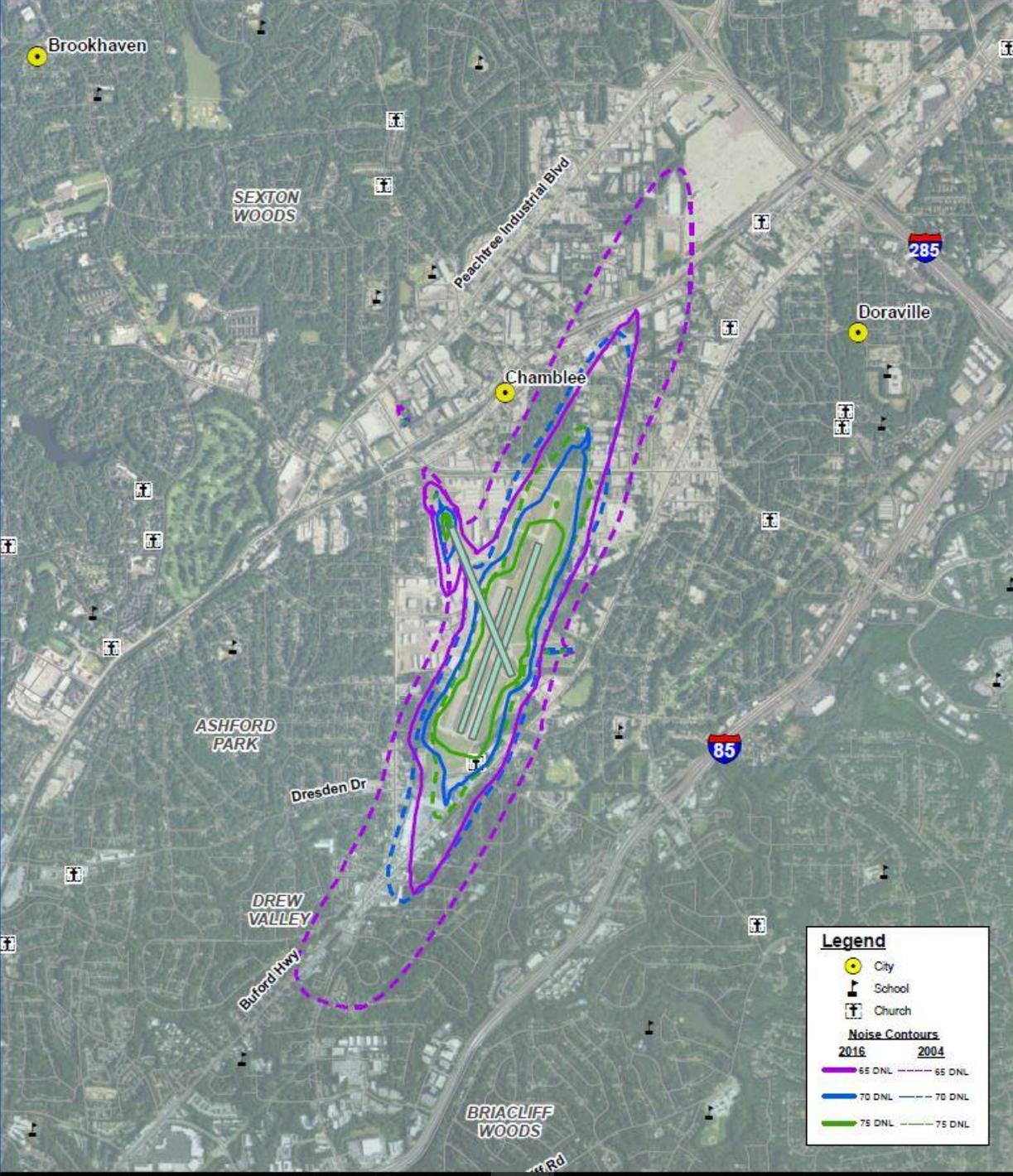
✈️ Public health vs economical/technological considerations

## ✈️ [PDK 2016 Noise Contour Map](#)

✈️ County BOC did not accept funding for this particular project.



# Changes in Noise Curves 2004-2016





# Airport Noise Program

- ✈ Noise Complaint Hotline
- ✈ Noise Monitors
  - ✈ 3 to the south, 1 to the north
  - ✈ High Noise Event Thresholds
    - NMS 1: 93 dBA LMax
    - NMS 2-4: 90 dBA LMax
- ✈ Noise & Operations Monitoring System (NOMS)
- ✈ Monthly Noise Reports
  - ✈ Presented at AAB meetings and published online
- ✈ Airport Letter-Writing Campaign
- ✈ Education
  - ✈ One-on-One
  - ✈ AAB meetings
    - ATC & Flight Instructors
  - ✈ Presentations to Airport Users
  - ✈ Posters in Fixed Based Operators (FBO) crew planning rooms

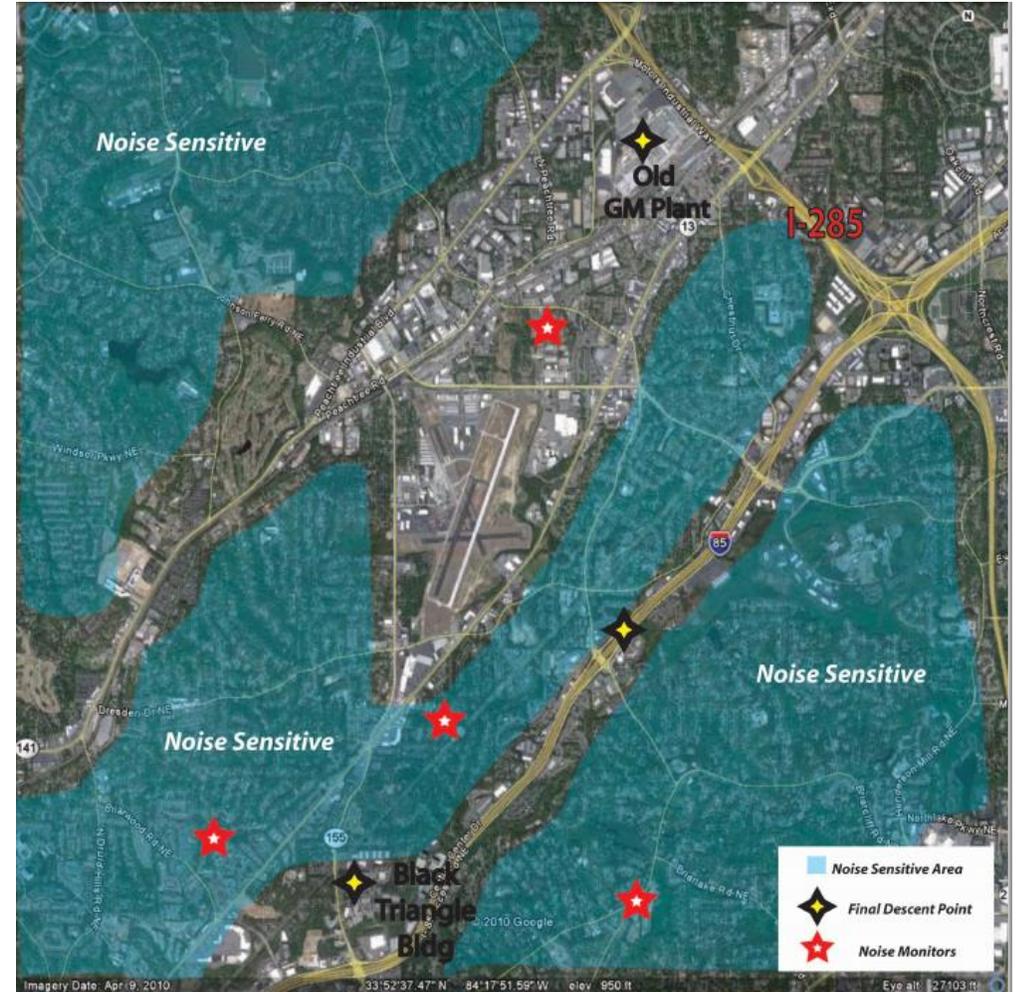


PDK Noise Monitor #4  
(Heritage Dr near the Globe  
Academy)



# PDK Noise Program

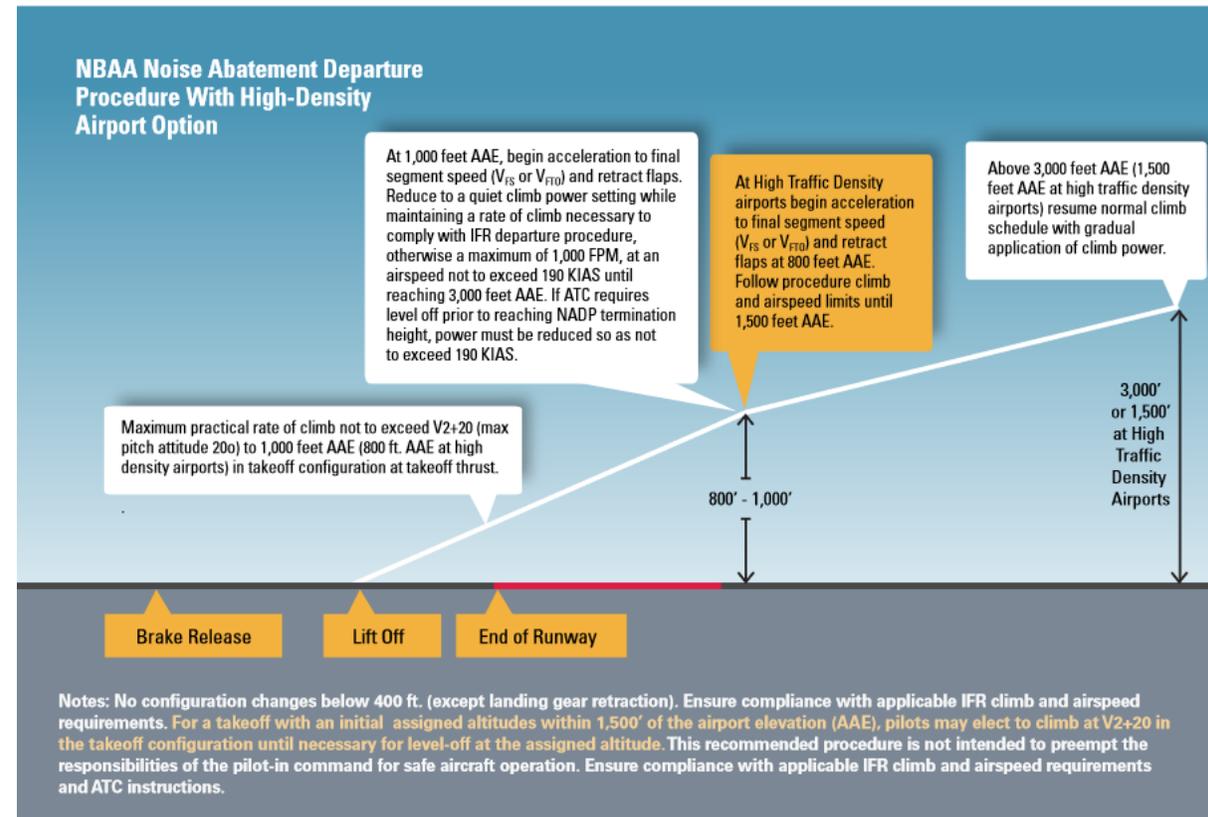
- ✈ Voluntary Curfew
- ✈ High Noise Event Monitoring
  - ✂ NMS 1 – 93.0 dBA LMax
  - ✂ NMS 2-4 – 90.0 dBA LMax
- ✈ Communication with corporate operators, flight schools, pilots, and the community





# Other Initiatives

- ✈ GPS-Y Approach
- ✈ NBAA Close In Approach & Departure Procedures
- ✈ Ground Run-up Procedures in specific locations on the airfield



# Noise & Operations Management System (NOMS)

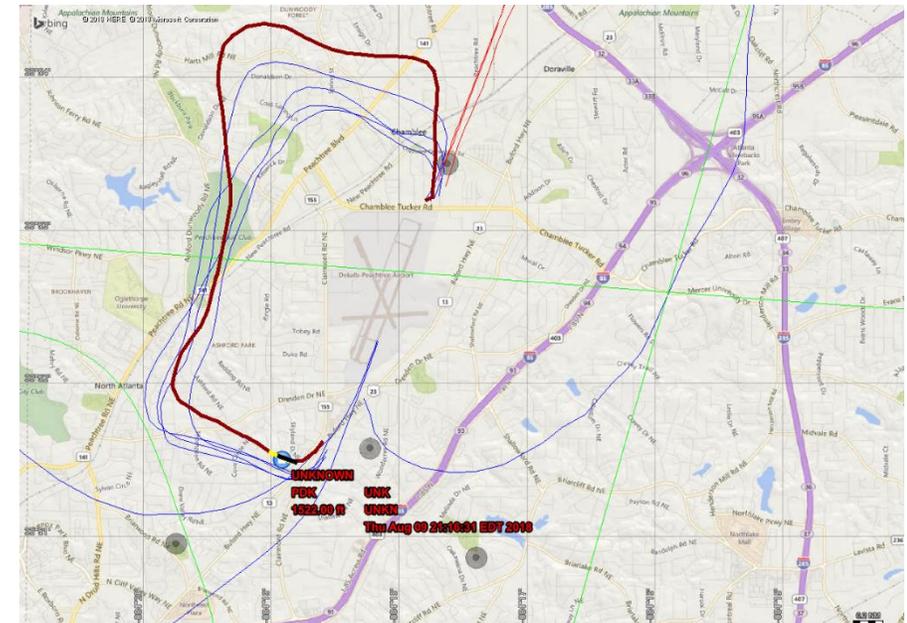


- ✈️ Allows airport to track flights, complaints, and noise events
  - ✈️ Flight Data (e.g., altitude, ID, type, speed, origin/destination, operation, PCAs, Flight Track Gates, etc.)
  - ✈️ Complaint Data (address, number of complaints, etc.)
  - ✈️ Noise Data (DNL, LMax, SEL, etc.)

## ✈️ NOMS Demonstration

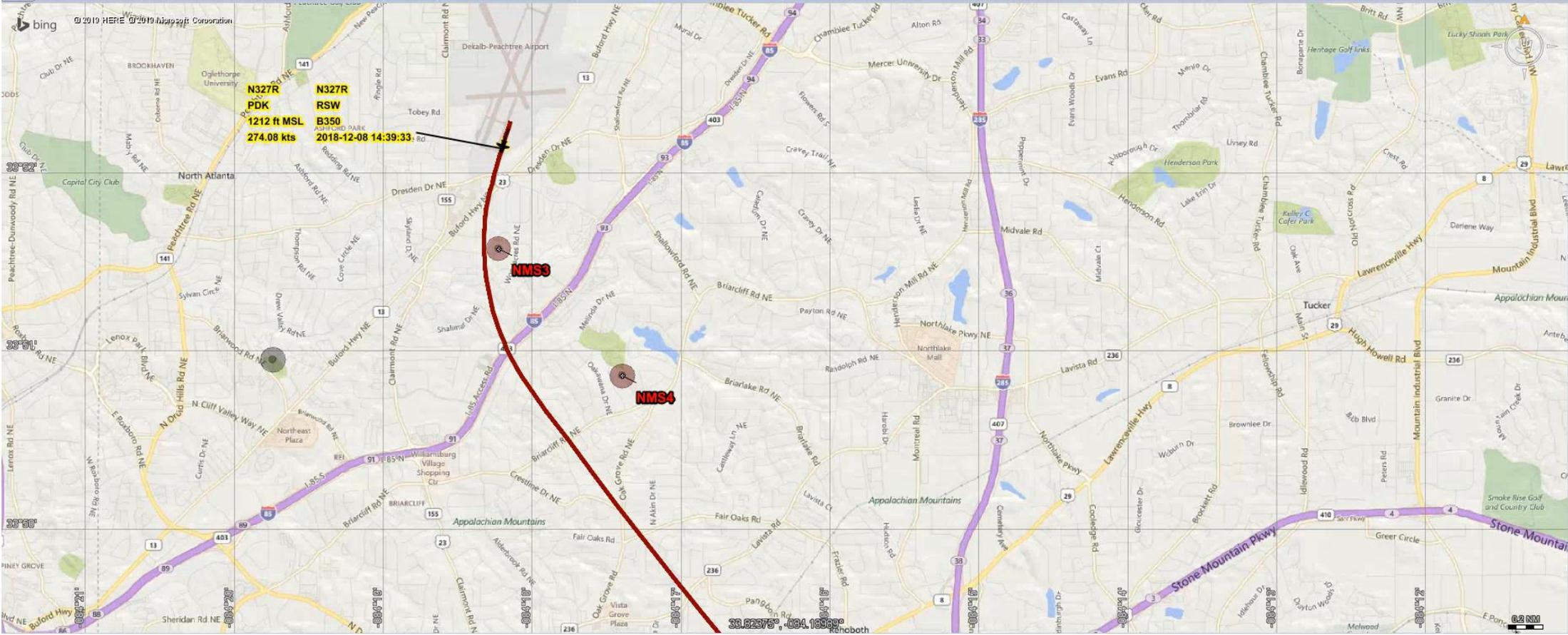
## ✈️ Future developments

- ✈️ Public-facing Portal
- ✈️ Virtual Noise Contours
- ✈️ Improved data accuracy (locally-based ADS-B sensor)





# Example NOMS Video





# Community Challenges

- ✈️ Metro Atlanta is growing!
- ✈️ Encroachment/Land Use Challenges
- ✈️ Mixed-age development
  - ✈️ Older 1950/60s homes coupled with brand new development
  - ✈️ Redevelopment of older neighborhoods – new residents come and go
- ✈️ Traffic/Road/Train/Urban Ambient Noise





# Questions/Comments

- ✈ <https://www.dekalbcountyga.gov/airport> ([www.pdkairport.org](http://www.pdkairport.org))
- ✈ <https://www.dekalbcountyga.gov/airport/noise-program>
- ✈ <https://www.dekalbcountyga.gov/airport/thinking-about-moving-near-pdk>

